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## ON A COLLECTION OF TERRESTRIAL MOLLUSKS FROM NICARAGUA

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Approximately 70 species and subspecies of land mollusks are known to occur in Nicaragua, many parts of which have yet to be intensively collected (Jacobson, 1965). To this apparently

impoverished fauna, an additional 4 species may be added as a result of the present study.

This paper records the mollusks obtained on a brief collecting trip made by the author in the company of Mr. Walter Smit to the district of Bonanza, a mining town in the north central part of the country in the Department of Zelaya (approximately 14° 2' N, 84° 55' W), in February - March, 1965. Collections were also made at Managua, Federal District. Added to this account are notes on specimens collected by Mr. Vance Greene while in Asang, 7 miles west of San Carlos, on the Cocos River, and in Quemiguas, Cerro del Tigre Negro, Department of Zelaya.

The country at Bonanza is hilly, with a well-forested cover, which locally has the appearance of a rain forest. At the time of our visit, rainfall was sufficient to keep the ground cover of the forest moist. However, the soil is not calcareous, and land shells were not easily found. At Asang, a heavily wooded region, live specimens were found under leaf mold and among rocks or boulders. The collecting area at Quemiguas was described previously (Jacobson, 1966: 102). At Managua, the capital city, all species were taken dead, since this was the dry season for this area.

Most of the specimens recorded here were deposited in the American Museum of Natural History; duplicates were contributed to the Museum of Comparative Zoology, Harvard, and the U. S. National Museum. A series of the cyclophorids were presented to the Field Museum of Natural History.

This account includes also the description of a new species of Nicaraguan *Streptostyla* which was first cited as a nude name by Fluck (1906: 4).

The writer wishes to express his thanks for the hospitality extended to him by Messrs. James R. Stringham, Walter Smit and others of the local management of the Neptune Mining Company during his stay at Bonanza. Dr. William K. Emerson kindly read the manuscript.

Abbreviations used for institutions:

AMNH. — American Museum of Natural History

ANSP. — Academy of Natural Sciences of Philadelphia

USNM. — U. S. National Museum

*Helicina (Oxyrhombus) amoena* Pfeiffer 1849. Constancia Mine, Bonanza: several dead specimens, one live on leaves of a low bush.

*Helicina (Tristramia) rostrata* Morelet 1851. Quemiguas, Cerro del Tigre Negro: 4 dead specimens, one live. The specimens vary in diameter from 13.2 to 10.1 mm. It is possible that the extremes of differences in size represent sexual dimorphism.

*Helicina (Oligyra) oweniana* Pfeiffer 1849. Quemiguas, Cerro del Tigre Negro: 2 specimens. This is the first record of this species from Nicaragua. One of the specimens has the orange peristome of *H. coccinostoma* Morelet (1849), a synonym; in the other the peristome is white.

*Neocyclotus dysoni dysoni* (Pfeiffer) 1851. Constanca Mine, Bonanza: 2 live specimens; Bonanza: 1 dead. These almost gerontic specimens have the basal notch on the outer lip which is characteristic of *Cyclotus bisinuatus* von Martens 1864. However, it seems advisable to follow Solem (1956, p. 54) and personal communication (September 7, 1965) in considering this a synonym. Solem feels that the "development of a basal notch appears to be a gerontic character of no value in separating races." (1956) The fact that the taxon of von Martens has two apparent notches is also of little importance, for, as von Martens himself writes (1890, p. 3) "The margin of the aperture can be injured, probably by the animal grazing . . . to satisfy a demand for lime." Von Martens thought *N. bisinuatus* might be synonymous with *irregularis* Pfeiffer from Costa Rica.

*Mexcyclotus chrysacme* (Bartsch & Morrison) 1942. Asang, Cocos River: 11 dead, 13 live specimens. This species was originally described from Wani as *Aperostoma (Neocyclotus) chrysacme*. The present lot was forwarded to Solem who stated *in litteris*, "After seeing your shells, I think *chrysacme* is a valid species, but in *Mexcyclotus*, not in *Neocyclotus*. Previously the operculum was unknown." The type lots of *chrysacme* (2 specimens each in USNM, ANSP) are dead, whitened shells, with the first 1.5 whorls straw colored or pinkish. In the series taken at Asang the earlier whorls of young shells are shining and brownish in color which becomes straw shade as the shell matures. Moreover, the protoconch is not entirely smooth, but especially in young shells it is very thickly and finely covered with minute granulations that tend to disappear as the shell reaches maturity. The freshly taken shell has a uniformly light brown periostracum which is lost when the shell is dead, giving place to the "golden" color

and "hydrophanous zones" referred to in the original description.

*Chondropoma callipeplum* Solem 1961. Asang; Río Cocos: numerous specimens. This species was originally described from near Wani, in north central Nicaragua. The large lot taken at Asang, almost 120 km north of Wani and on the Honduran border, connects the present species, the only one of its genus in Nicaragua, with its congeners in the richer chondropomid fauna to the north. Its presence in Nicaragua contradicts Tate's views on this fauna (1870, p. 162) and extends the West Indian influence on the Central American shell fauna more to the south.

*Vaginulus (Latipes) occidentalis* (Guilding) 1825. Constanca Mine, Bonanza: 2 live specimens. H. B. Baker (1926, p. 29) believes *occidentalis* to be the predominant species of *Latipes* and writes, ". . . (it) has invaded most cultivated areas around the Caribbean." It will probably be found to be widely spread in Nicaragua and elsewhere in Central America.

*Succinea recisa* Morelet 1851. Parque de los Piedrecitas, Managua: several dead specimens near flower beds. As far as could be learned, this species is known from the shell only. Anatomical investigation will be needed to establish its true taxonomic position. There is some confusion regarding the shell differences between this species and *S. guatemalensis* Morelet 1849. According to figures in Fischer & Crosse (1878, pl. 26, fig. 13, 13a), *recisa* has a higher spire than *guatemalensis*, yet these authors write of it (p. 655), "This species (i.e. *recisa*) is remarkable because of the extreme brevity of the spire compared to the last whorl, which forms by itself almost the entire shell." (Translated)

*Deroceras laeve* (Mueller) 1774. Along road to Concha Urrutia, Bonanza, under wet leaves: 6 specimens. This widely spread immigrant from Europe has appeared under many synonyms in America (see Pilsbry 1948, 546 ff.)

*Subulina octona* (Bruguière) 1792. Along road to Concha Urrutia, Bonanza: numerous live and dead specimens.

*Lamellaxis (Allopeas) gracilis* (Hutton) 1834. Mercedes Airport, Managua; Parque de las Piedrecitas, Managua; cemetery at Tindirí, Masaya: numerous dead specimens.

*Lamellaxis (Allopeas) micrus* (d'Orbigny) 1835. Parque de las Piedrecitas, Managua: several dead specimens.

*Euglandina cumingi* (Beck) 1837. In banana plantation and

on grounds of Moravian Mission, Bonanza: 5 live specimens.

*Salasiella pulchella* (Pfeiffer) 1857. Asang, Cocos River: 9 specimens. This is the first record of this species in Nicaragua. It has been reported from Chiapas, Mexico, and Costa Rica.

*Lacteoluna selenina* (Gould) 1848. Parque de las Piedras, Managua: 1 specimen. The dead and worn specimen is provisionally determined. This species has not been reported previously from Nicaragua.

**STREPTOSTYLA (CHERSOMITRA) WANI new species.**

Page 120, upper 2 figs.

*Streptostyla flucki* Bartsch, Fluck, 1906, p. 4 (nude name).

Shell thin, elongate-ovate, almost turrated, glossy, sculptured only by fine, uneven growth lines. Whorls 8, weakly rounded, gradually descending. Protoconch glassy, faintly punctate, sharply elevated over the first post-nuclear whorl. Body whorl large, about twice the height of the spire, hardly inflated, peristome scarcely convex. Base evenly rounded. Suture shallow, simple, with a narrow secondary line on the last 3 whorls, widest at the body whorl near the aperture. Aperture narrow, about one-half the length of the shell, columella slightly twisted, edged with a rather strong callus cord.

Length 32 mm., Diameter 13 mm., Length of aperture 17 mm.

Length 21.5 mm., Diameter 9 mm., Length of aperture 14 mm. (juvenile)

Type locality: near Wani (Huani), Nicaragua, Rev. W. H. Fluck leg.

The new species resembles *S. vancegreenei* Jacobson 1966 in the nature of the columellar cord and especially in the elevated protoconch. It differs chiefly in having a decidedly more slender shell. The holotype is a dead shell divested of periostracum except for tiny fragments. The paratype is an immature shell, freshly taken, which shows a glossy, light orange-yellow periostracum.

Type depository: USNM. No. 426028, Holotype. ANSP. No. 97592, Paratype.

I wish to express my gratitude to Drs. Joseph Rosewater and J.P.E. Morrison of the USNM. and to Dr. R. Tucker Abbott of the ANSP. for the loan of the specimens involved. Photographs courtesy of AMNH.

*Streptostyla (Chersomitra) vancegreenei* Jacobson 1966. See Nautilus, 79: 101-103, fig. 1.

*Bulimulus (Bulimulus) corneus* Sowerby 1833. Along the sides of Rosita Road under wet leaves, Constancia Mine, Bonanza; in banana plantation, Bonanza; Parque de las Piedrecitas, Managua, along the edge of flower beds: many dead and live specimens. This proved to be one of the commonest larger species in the limestone-free area of Bonanza.

*Orthalicus princeps* (Broderip) 1833. Constancia Mine, Bonanza on road to Rositas: 4 dead specimens; Quemiguas, Cerro del Tigre Negro: 3 dead specimens.

*Praticolella griseola* (Pfeiffer) 1841. Cemetery at Tindirí, Masaya; Parque de las Piedrecitas, Managua: numerous dead specimens.

*Averellia (Trichodiscina) coactiliata* (Férussac) 1838. Bonanza: 1 dead specimen.

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